

Water Quality Controls: Wisconsin Inland Lakes

Thomas S. Hanrahan

Follow this and additional works at: <http://scholarship.law.marquette.edu/mulr>



Part of the [Law Commons](#)

Repository Citation

Thomas S. Hanrahan, *Water Quality Controls: Wisconsin Inland Lakes*, 77 Marq. L. Rev. 585 (1994).
Available at: <http://scholarship.law.marquette.edu/mulr/vol77/iss3/13>

This Article is brought to you for free and open access by the Journals at Marquette Law Scholarly Commons. It has been accepted for inclusion in Marquette Law Review by an authorized administrator of Marquette Law Scholarly Commons. For more information, please contact megan.obrien@marquette.edu.

WATER QUALITY CONTROLS: WISCONSIN INLAND LAKES

I. INTRODUCTION

The State of Wisconsin has an abundance of water resources. Among them are over 15,000 lakes, each larger than fifty acres.¹ These lakes are a source of recreational enjoyment for both residents and non-residents of Wisconsin. Today, however, lakes are multipurpose in use. Swimming, boating, and fishing must make room for other uses, including municipal and industrial water supply, agricultural irrigation, and flood control.²

The socioeconomic structure of the United States has made a rapid shift from a rural-agricultural way of life to an urban-industrial way of life over the past half century.³ This shift toward centralized, urban-industrial life has increased demands on water resources, giving rise to water use conflicts and rivalries, and intensifying the complex problem of pollution control.⁴ Furthermore, increasing demands on water resources have resulted in water quality deterioration. This deterioration, resulting from both natural and man-made causes, threatens the beauty and existence of many Wisconsin lakes.

This Comment will focus on the maintenance of water quality standards as they apply to Wisconsin inland lakes.⁵ Sources of pollution will be identified and various methods of water quality control will be discussed, focusing on state and local implementation of these controls.

II. SOURCES OF SURFACE WATER POLLUTION

Water pollution has been defined as "any man-made alteration of the quality of water that appreciably impairs its usefulness for a particular purpose."⁶ Humans are responsible for several types of pollution that

1. BURT P. NATKINS & CARL A. SINDERBRAND, *WISCONSIN ENVIRONMENTAL LAW* 18 (1990).

2. NELSON L. NEMEROW, *STREAM, LAKE, ESTUARY, AND OCEAN POLLUTION* 392 (2d ed. 1991).

3. CLARENCE J. VELZ, *APPLIED STREAM SANITATION* 4 (2d ed. 1984).

4. *Id.*

5. In discussing Wisconsin inland lakes, I will occasionally use the term "surface waters." Surface waters are defined by the Wisconsin Department of Natural Resources as "all natural and artificial named and unnamed lakes . . . within the boundaries of the state, but not including cooling lakes, farm ponds and facilities constructed for the treatment of wastewaters." WIS. ADMIN. CODE § NR 102.03(6) (May 1993).

6. Jon A. Kusler, *Water Quality Protection for Inland Lakes in Wisconsin*, 1970 WIS. L. REV. 35, 38. Wisconsin statutes describe pollution as those things "contaminating or render-

impair surface water quality. Polluting substances are contributed either (1) directly and intentionally by such methods as the discharge of industrial or municipal sewage into lakes, or (2) indirectly and unintentionally from such varying sources as agricultural runoff of nutrients and sediment from farmland, storm water drainage, and pollutants in the groundwaters that flow into lakes.⁷ These direct and indirect pollutants carry many substances that adversely affect the color, taste, odor, bacterial and viral levels, and the plant life and species of fish of the water body.⁸

Direct polluters—principally industries and municipal treatment plants—who discharge their wastes into lakes as a method of waste disposal are the most obvious human sources of pollution.⁹ However, indirect pollution is a particularly serious problem for the vast majority of Wisconsin lakes, which receive no direct discharges of industrial or municipal wastes.¹⁰

III. DIRECT/POINT SOURCE POLLUTION

A. *Federal Water Pollution Control and the State's Role*

The Clean Water Act (CWA) evolved from the federal government's interest in water pollution control. The CWA is the culmination of several acts and statutes that were originally enacted in 1899 and most recently amended in 1987.¹¹ Its stated goal is to "restore and maintain the chemical, physical, and biological integrity of the Nation's waters" by

ing unclean or impure the waters of the state, or making the same injurious to public health, harmful for commercial or recreational use, or deleterious to fish, bird, animal or plant life." Wis. STAT. § 144.01(10) (1991-92). Pollution even includes heat from noncontact cooling water. *Id.* § 147.015(13).

7. Kusler, *supra* note 6, at 39. This is commonly called "nonpoint source pollution." Nonpoint sources are predominantly uncontrolled and made up of diffused material from erosion; animal, bird, and insect feces; pesticide and fertilizer residues in runoff; oil leaks; and the generalized debris of human and natural activities. Peter N. Davis, *Federal and State Water Quality Regulation and Law in Missouri*, 55 MD. L. REV. 411, 428 (1990). Recent research indicates that nonpoint sources of pollution are the primary sources (65% to 75%) of surface watercourse pollution today. *Id.*

8. Kusler, *supra* note 6, at 39.

9. *Id.* at 40.

10. *Id.*

11. The genesis of the CWA was in the Rivers and Harbors Act (or Refuse Act) of 1899. In 1948 the Federal Water Pollution Control Act (FWCPA) was enacted. This act, combined with the Refuse Act, had almost no success in curbing pollution or improving water quality until the Army Corps of Engineers shifted the emphasis of the regulations from maintaining the quality of water receiving the effluent, or discharged water, and emphasized instead the quality of the effluent being discharged. The 1972, 1977, and 1987 amendments to the FWCPA complete what is today collectively known as the Clean Water Act. NATKINS & SINDERBRAND, *supra* note 1, at 20.

eliminating pollutant discharges.¹² "Waters of the United States" have been defined to include traditionally navigable waters,¹³ waters subject to the tidal ebb and flow, all wetlands, all inter- and intra-state waters, mud flats, sand flats, prairie potholes, clay lakes, and natural ponds if their use, degradation, or destruction could possibly affect interstate or foreign commerce.¹⁴ The CWA limits the direct discharge of wastewater from industrial, commercial, and municipal facilities to water bodies through the implementation of wastewater discharge permits called National Pollution Discharge Elimination System (NPDES) permits.¹⁵

The NPDES permit program is administered by the United States Environmental Protection Agency (EPA).¹⁶ Authority to implement the NPDES permit program may be delegated to the state, provided the state program is EPA approved and at least as stringent as the NPDES program.¹⁷ The EPA may continue to exercise control over the issuance of NPDES permits even after approval of a state program. In addition, the EPA may retain supervisory jurisdiction over a state-delegated program if the state is not implementing it in accordance with the CWA.¹⁸ Short of withdrawing a state's program authority outright, the EPA may change a state's program by threatening to withhold federal funds.¹⁹ Furthermore, the EPA may veto a state-issued permit if it deems the

12. 33 U.S.C. § 1251 (1988). To achieve this objective, the Act establishes several goals to: (1) eliminate the discharge of pollutants into the navigable waters by 1985; (2) establish water quality that provides for the protection and propagation of fish, shellfish, and wildlife and provides for recreation in and on the water by July 1, 1983; (3) prohibit the discharge of toxic pollutants in toxic amounts. *Id.* § 1251(a)(1)(2)(3). Pollutants, however, continue to be discharged into the nation's waters.

13. "Navigable waters" is defined as "the waters of the United States, including the territorial seas." *Id.* § 1362(7). By reference to legislative history, the courts have held that the CWA extends to all "waters of the United States," and not merely to commercially navigable waters. *United States v. Ashland Oil & Transp. Co.*, 504 F.2d 1317, 1323 (6th Cir. 1974).

14. *NATKINS & SINDERBRAND*, *supra* note 1, at 20 (citing 40 C.F.R. § 122.2 (1992)).

15. *Id.* at 20. Permits issued under NPDES control wastewater discharges by commercial, industrial, and municipal facilities to water bodies. Permits may be also issued under Section "404" if waters are to be dredged and filled.

16. *See* 33 U.S.C. § 1342(a)(1) (1988).

17. *Id.* § 1342(b). The state permit programs must: (1) insure compliance with the Act's policies and requirements for effluent limitations, water quality related effluent limitations, national performance standards, and toxic standards; (2) require permits with a maximum term of 5 years; (3) have adequate enforcement powers; (4) require monitoring, record-keeping, and reporting, and provide for entry and inspection; (5) require public notice and provide for a public hearing on permit applications; (6) provide for notice of permit applications to EPA and other affected states; and (7) provide for pretreatment standards. *Id.*

18. *Id.* § 1342(c) (1986).

19. *See* DEWITT ET AL., *WISCONSIN ENVIRONMENTAL LAW HANDBOOK* 48 (1990).

issuance of such permit to be outside the guidelines and requirements of the CWA.²⁰

In Wisconsin, authority to administer the NPDES permit program has been delegated to the state by the EPA. The program is implemented at the state level by the Wisconsin Department of Natural Resources (DNR) through the Wisconsin Pollutant Discharge Elimination System (WPDES).²¹

Congress recognized that meeting the federal water quality goals would be expensive. As an incentive to encourage compliance, Congress created several grant programs that distribute money to states to, for example, conduct research and development and facilitate administration and enforcement of programs.²² In Wisconsin, the state will provide grants for some projects, such as construction of sewerage facilities, if the project is eligible for federal money that is unavailable.²³ The state has attempted to gradually phase out this program in favor of a low interest rate loan program.²⁴

Every two years, each state is required to submit a report on lake quality for EPA approval.²⁵ The report must include information on the water quality of all publicly owned lakes and methods for controlling pollution. The report also must list and describe lakes with impaired uses, including those that do not meet water quality standards.²⁶ States that do not submit reports are not eligible for clean lakes grant money.²⁷

B. Overview of WPDES

The Clean Water Act and its Wisconsin counterpart utilize two basic types of effluent limits that dictate required effluent quality: categorical effluent limits (or technology-based limits) and water quality-based limits.

20. 33 U.S.C. § 1342(d)(2) (1988).

21. Wisconsin received authority to administer this program in 1974 with the enactment of Wis. STAT. ch. 147 (1991-92). The program requires a permit for the "discharge of any pollutant into any waters of the state." *Id.* § 147.02(1). "Pollutant" is broadly defined to include: dredged spoils, solid waste, incinerator residue, sewage, garbage, refuse, oil, sewage sludge, and virtually any other substance that may be discharged into state waters. Wis. STAT. § 147.015(13) (1991-92).

22. 33 U.S.C. § 1383 (1988); *see also* NATKINS & SINDERBRAND, *supra* note 1, at 21-22; 33 U.S.C. §§ 1255-1261, 1281-99 (1988) (outlining various grant programs).

23. *See* Wis. STAT. § 144.24 (1991-92). This program is known as the "Wisconsin Fund."

24. *Id.* § 144.241. This is known as the "Clean Water Fund."

25. 33 U.S.C. § 1324(a)(1) (1988).

26. *Id.* § 1324(a)(1)(E) (1991-92).

27. *Id.* § 1383.

1. Categorical Effluent Limits

Categorical effluent limits are technology-based standards²⁸ for all categories of point sources established by the EPA.²⁹ These standards and limitations are set forth in federal and state regulations.³⁰ Wisconsin standards must "comply with and not exceed" the federal requirements.³¹

Several types of technology standards exist, and the DNR is required to promulgate effluent limitations for each point source category.³² As "end of pipe" restrictions, effluent limitations are applied at the point of discharge.³³ The amount of allowable discharge for a given point source category is based on the level of technology specified by law. In other words, a discharger's final waste product must meet the water quality standard that is based on the discharger's particular industry.

Under the 1972 CWA amendments, existing dischargers were required to comply with the effluent limitations standards by utilizing the "best practicable control technology currently available" (BPT) by July 1, 1977.³⁴ This standard was designed to avoid public health hazards.³⁵ By July 1, 1983, a more stringent "best available technology economically achievable" (BAT) standard was to be utilized.³⁶ This standard was designed to achieve swimmable water.³⁷

Under the 1977 amendments to the CWA, a new technology, "best conventional pollutant control technology" (BCT), was to be utilized by

28. These limits are based on what technology can achieve in pollution control. For example, a certain industrial category may be allowed to discharge so many pounds of pollutant for each ton of production. DEWITT ET AL., *supra* note 19, at 64.

29. These categories are generally industry based. For example, all leather tanning factories are grouped in one category, as are paper mills and plastics processors.

30. 40 CFR §§ 400-71 (1991); WIS. ADMIN. CODE § NR 220-97 (1992).

31. WIS. STAT. § 147.035(2) (1991-92). The rule states: "All rules promulgated by the [DNR] under this chapter as they relate to point source discharges, effluent limitations, . . . shall comply with and not exceed the requirements of the federal water pollution control act . . . and regulations adopted under that act." WIS. STAT. § 147.032(2). There are several exceptions, however, which allow the DNR to promulgate standards and limitations in the absence of federal regulations. *See, e.g.*, WIS. STAT. § 147.035(3) (1991-92).

32. An effluent limitation is "any restriction established by the [DNR], including schedules of compliance, on quantities, rates, and concentrations of chemical, physical, biological, and other constituents discharged from point sources into the waters of this state." WIS. STAT. § 147.015(6) (1991-92).

33. *See* DEWITT ET AL., *supra* note 19, at 65-66.

34. 33 U.S.C. § 1311(b)(1)(A) (1988).

35. Davis, *supra* note 7, at 421.

36. 33 U.S.C. § 1311(b)(2)(A) (1988).

37. Davis, *supra* note 7, at 421.

July 1, 1984.³⁸ Under the 1987 amendments, this deadline was extended to March 31, 1989.³⁹

2. Water Quality-Based Limits

The second type of effluent limit is known as water quality-based effluent limit. The key inquiry with water quality-based limits is the impact of the discharge on the water quality of the receiving water,⁴⁰ as opposed to technology-based controls that focus on the capacity to control pollutants prior to discharge. Water quality-based limits are derived from standards representing the level of discharge that can be assimilated into a body of water without deterioration of a designated use.⁴¹ These standards are not routinely imposed on all direct dischargers. Instead, they are commonly imposed as an additional control measure in a WPDES permit when a more stringent limitation is needed to protect local water quality.⁴²

Under the CWA each state must establish water quality standards for all bodies of water within the state⁴³ and have them reviewed every three years.⁴⁴ The state must determine both the water uses appropriate for each watercourse and the physical, chemical, and biological characteristics appropriate for each category of water in order to protect and preserve that use. This water quality standard is then expressed in numerical form (a specified amount of oxygen per unit of water, for example).⁴⁵ Once the effluent standard is established, a determination is made as to the amount of a particular pollutant that may be discharged by a source without causing the criteria for that pollutant to be exceeded.⁴⁶ If the appropriate technology-based limitation established for the pollutant will not cause the effluent limit to be exceeded, then the water quality-based limitation will not be imposed. The more stringent water quality limitation will come into effect, however, if the technology-based limitation is insufficient to protect the water body's designated use.⁴⁷

38. 33 U.S.C. § 1311(b)(2)(E) (1988).

39. *Id.* § 1311(b)(2)(F).

40. See generally DEWITT ET AL., *supra* note 19, at 65-68.

41. NATKINS & SINDERBRAND, *supra* note 1, at 33.

42. John P.C. Fogarty, *Short History of the Federal Pollution Control Act*, in CLEAN WATER DESKBOOK: THE ENVIRONMENTAL LAW REPORTER 15 (2d ed. 1991).

43. 33 U.S.C. § 1313(a) (1988).

44. *Id.* § 1313(c)(1).

45. Fogarty, *supra* note 42, at 15.

46. 33 U.S.C. § 1311(b)(1)(C) (1988).

47. Fogarty, *supra* note 42, at 15.

If the water quality standard must be imposed, the "total maximum daily load" (TMDL) is determined. The TMDL is the maximum amount of a particular pollutant that may be discharged into a water body without violating the effluent standard. Once this TMDL is determined, it is incorporated into a state's plan for achieving water quality standards.⁴⁸

Although each state is responsible for establishing its own water uses and standards, these standards are subject to review by the EPA⁴⁹ and may be replaced by standards promulgated by the EPA if the state's standards fail to meet certain minimum requirements.⁵⁰ The state, however, is free to set standards more stringent than the minimum established by the EPA.⁵¹

3. Antidegradation

Wisconsin has enacted an antidegradation provision for its waters.⁵² This provision applies to any new or increased discharge of conventional or toxic pollutants. In other words, this provision is implemented when a discharger wants to increase discharge levels or discharge new pollutants. The provision specifically provides:

No waters of the state shall be lowered in quality unless it has been affirmatively demonstrated to the department that such a change is justified as a result of necessary economic and social development, provided that no new or increased effluent interferes with or becomes injurious to any assigned uses made of or presently possible in such waters.⁵³

In determining whether to grant a new or increased discharge, the DNR first considers the specific classification of the potentially affected surface water. The first classification is "fish and aquatic life waters," which means that waters in this category must be able to support aquatic life and be safe for recreational purposes.⁵⁴ All inland lakes in Wisconsin fall under this category. The second classification contains "out-

48. 33 U.S.C. § 1313(e) (1988); *see* WIS. ADMIN. CODE § NR 105, 106 (1985). These sections provide the state procedure used to derive numerical surface water quality criteria that protects aquatic life, animals, and humans, as well as specifying the methods to be used to calculate water quality-based effluent limitations for toxic substances. They also provide for conditions under which limits for toxic substances will be included in WPDES permits.

49. 33 U.S.C. § 1313(c)(3) (1988).

50. *Id.* § 1313(c)(4).

51. *Id.* § 1370.

52. WIS. ADMIN. CODE § NR 207 (May, 1991). This DNR chapter creating an antidegradation standard was promulgated pursuant to WIS. STAT. 144.025(2)(b) (1991-92), creating water quality standards for surface waters of the state.

53. WIS. ADMIN. CODE § NR 102.05(1)(a) (Nov. 1992).

54. *Id.* § NR 102.13 (May 1993).

standing resource waters.”⁵⁵ The quality of waters in this category cannot be lowered. The third classification specifies “exceptional resource waters,”⁵⁶ which similarly cannot be lowered in quality. Unfortunately for Wisconsin lakes, the second and third categories, those prohibiting a lowering of water quality, only protect a limited number of Wisconsin rivers (about ninety-five) and do not protect any Wisconsin lakes. Thus, additional or new discharge may potentially be allowed in most Wisconsin lakes.⁵⁷

In determining whether to actually allow the additional or new discharge, the DNR follows a three step analysis.⁵⁸ First, the DNR determines whether the discharge will result in a “significant lowering of water quality.”⁵⁹ The regulatory test for this factor focuses on whether the new or increased discharge will utilize more than one-third of the assimilative capacity of the receiving water for the various constituents discharged.⁶⁰ At its option, a discharger can waive this test requirement and concede, without prejudice, a significant lowering for the purposes of this analysis.⁶¹

If the DNR finds an actual significant lowering, or if the discharger concedes that significant lowering will occur, the DNR’s next step is to determine whether the increased discharge results in a socially or economically beneficial use. This test is quite general and can be met by establishing any one of seven items ranging from increasing or maintaining employment to providing “economic or social benefits to the community.”⁶² Since this standard is very low, it is not difficult to satisfy.

Assuming there is a significant lowering that is socially or economically beneficial, the third and final step of the DNR’s analysis is to determine whether alternative treatment technologies exist that could prevent significant lowering of the water quality standard.⁶³ These technologies, however, do not have to be considered if (1) the capital costs exceed 110 percent of the treatment technology otherwise required, or (2) the oper-

55. *Id.* § NR 102.10 (May 1993).

56. *Id.* § NR 102.11 (May 1993).

57. *See generally supra* notes 47-49 and accompanying text.

58. This analysis is governed by Wis. ADMIN. CODE § NR 207 (May 1991).

59. Wis. ADMIN. CODE § NR 207.05 (May 1991).

60. *Id.*

61. *Id.*

62. *Id.* § NR 207.04(1)(c)(1) (May 1991).

63. *Id.* § NR 207.04(1)(d).

ating costs exceed 115 percent of that of the technology otherwise required.⁶⁴

Although well intentioned, the Wisconsin antidegradation rule is not stringent enough, given that the purpose of the federal antidegradation policy is to prevent water quality deterioration. No Wisconsin lakes receive absolute protection from new or increased discharge, and the standards for satisfying the requirement of "social and economic benefit" are too easily satisfied. Thus, the effectiveness of the water quality protection by the antidegradation policy is seriously undermined.⁶⁵

4. Variances

The DNR is authorized to grant exceptions, or variances, to establish water quality-based effluent limitations.⁶⁶ Although it cannot grant variances for categorical effluent limitations except in very limited circumstances, the DNR may modify time limits for compliance. To be granted a variance, the applicant must prove by the greater weight of the credible evidence that the water quality standard established for the particular water body is unattainable. This inability to comply must be due to at least one of the following circumstances: (1) naturally occurring pollutant levels; (2) existing water levels or low flow conditions; (3) human caused conditions that cannot be remedied or whose remedy would cause greater environmental damage; (4) dams, diversions, or other hydrologic modifications that make restoration of the water body unfeasible; (5) natural, physical features of the water body; or (6) substantial adverse social or economic impacts in the affected area if the standard is applied.⁶⁷

Variances may be granted for a maximum of three years and are renewable.⁶⁸ The permit for which a variance is granted must include an achievable initial effluent limit, as well as a compliance schedule and interim effluent limits that are achievable during the term of the permit. The permit must also require the discharger to investigate technologies, process changes, or other techniques that may allow it to achieve compli-

64. *Id.* § NR 207.04(1)(d)(2)(D). It is important to note that if the DNR approves an additional or new discharge, that discharge must still meet the effluent limitations and other water quality standards in existence under the WPDES.

65. The antidegradation provision is relatively new, and its application is still evolving.

66. WIS. STAT. § 147.05 (1991-92). Granting variances simply means modifying, or making less stringent, the effluent standard.

67. *Id.* § 147.05(4)(a).

68. *Id.* § 147.05(5)(b)(6).

ance with the standard.⁶⁹ The permit may also include additional monitoring and other appropriate conditions. In practice, the DNR has construed these provisions narrowly.⁷⁰

There is no question that regulation of direct discharge sources is beneficial and necessary in protecting the water quality of our lakes. The effectiveness of point source regulation in significantly improving lake water quality, however, is limited to a great degree because of nonpoint source pollution—which is not accounted for in the NPDES permit program.

IV. NONPOINT SOURCE POLLUTION

Although factory and industry effluent is the most visible symbol of water pollution, nonpoint source pollution is the “invisible foe that prevents many waters from achieving their designated uses.”⁷¹ To the extent that point source pollution controls have been successful in reducing water pollution, the relative importance of nonpoint source pollution controls have increased.⁷²

Nonpoint sources are the predominant sources of water pollution and constitute sixty-five to seventy-five percent of surface water pollution today.⁷³ This epidemic of “poison runoff,” as some have labelled nonpoint source pollution, includes a wide variety of pollutants resulting from a broad range of activities.⁷⁴ These are largely uncontrolled sources made up of diffused material from erosion; animal, bird, and insect feces; fertilizer and pesticide residues in runoff; oil leaks; and the

69. *Id.* § 147.05(5)(c).

70. DeWitt et al., *supra* note 19, at 72. It is interesting to note that in Missouri, the granting of a variance does not relieve the discharger of any liability imposed by the law of nuisance. Mo. REV. STAT. § 644.061(1) (1992).

71. MARY J. HOUGHTON, THE CLEAN WATER ACT AMENDMENTS OF 1987, at 40 (1987). Wisconsin defines nonpoint source pollution as “a land management activity which contributes to runoff, seepage or percolation which adversely affects or threatens the quality of waters of this state and which is not a point source” WIS. STAT. § 144.25(2)(b) (1991-92).

72. A. Myrick Freeman III, *Water Pollution Policy*, in PUBLIC POLICIES FOR ENVIRONMENTAL PROTECTION 97, 109 (Paul R. Portney ed., 1990).

73. Davis, *supra* note 7, at 428.

74. Studies show that a number of common water pollutants come principally from diffuse sources:

generalized debris of human and natural activities.⁷⁵ These materials generally originate in both urban and rural areas as a result of intensively used and poorly managed land.⁷⁶ When these materials enter surface waters, they have adverse impacts on water quality, aquatic life, and human health.

Congress has recognized the need to control poison runoff. The language of the CWA reflects this recognition: "[I]t is the national policy that programs for the control of nonpoint sources of pollution be developed and implemented in an expeditious manner so as to enable the goals of [the Clean Water Act] to be met through the control of both point and nonpoint sources of pollution."⁷⁷

In this section, the provisions of the CWA addressing nonpoint pollution law will be discussed. As will be illustrated, states have tremendous latitude in implementing policy to satisfy federal mandates. For this reason, a broad outline of an effective state poison runoff program is particularly useful. Unfortunately, no state has such a comprehensive program. Nevertheless, it is useful to look at a specific state's program in design and function and compare it to the outlined "ideal" state runoff program. The final portion of this section will outline Wisconsin's efforts to control poison runoff.

A. *The Clean Water Act*

The 1972 Federal Water Pollution Control Act Amendments to the CWA required that the EPA and the states devise comprehensive programs to control water pollution from both point and nonpoint sources.

POLLUTANT	POISON RUNOFF CONTRIBUTION
Iron	95%
Total Nitrogen	90%
Fecal coliform bacteria	90%
Chemical oxygen demand	70%
Oil	70%
Zinc	70%
Phosphorus	66%
Lead	57%
Chromium	50%

PAUL THOMPSON, POISON RUNOFF: A GUIDE TO STATE AND LOCAL CONTROL OF NONPOINT SOURCE WATER POLLUTION 3 (Robert Adler & Jessica Landman eds., 1989).

75. *See id.*

76. NATKINS & SINDERBRAND, *supra* note 1, at 39.

77. 33 U.S.C. § 1251(a)(7) (1988). Congress recognized the seriousness of the poison runoff problem in a floor debate: "[T]he problem of nonpoint source pollution is a national problem requiring a national solution." 133 CONG. REC. S744 (daily ed. Jan. 14, 1987) (remarks of Sen. Baucus).

Section 102(a) requires the development of "comprehensive programs for preventing, reducing, or eliminating the pollution of the navigable waters and ground waters and improving the sanitary condition of surface and underground waters."⁷⁸ Furthermore, section 201(c) of the CWA provides: "To the extent practicable, waste treatment management shall be on an area-wide basis and provide control or treatment of all point *and nonpoint* sources of pollution."⁷⁹ Although the CWA has permitting provisions for point sources of pollution, the means to enforce the control of nonpoint source pollution are considerably less precise.⁸⁰

As mentioned previously in discussing water quality standards with respect to *point sources* of pollution,⁸¹ each state must establish water quality standards for all bodies of water in the state. Where technology-based controls on point source polluters alone are not enough to ensure compliance with water quality standards, the "total maximum daily load" (TMDL) is determined.⁸² The TMDL is the maximum amount of a particular pollutant that can be discharged into a water body without violating the water quality standard.⁸³

TMDLs are supposed to apply to nonpoint sources through the operation of each state's comprehensive water quality management plan prepared under section 208 of the CWA.⁸⁴ Section 208 requires each state to draft area-wide waste treatment management plans that include identification procedures for nonpoint sources of pollution from such sources as agriculture, forestry, mining, and construction.⁸⁵ Guidelines for controlling these nonpoint sources of pollution have been established by the EPA, which has also dispersed funds to aid states in regulating poison runoff.⁸⁶

Recent federal court opinions confirm the application of water quality standards to nonpoint sources. The Ninth Circuit Court of Appeals held in two separate cases that water quality standards must be consid-

78. 33 U.S.C. § 1252(a) (1988).

79. *Id.* § 1281(c) (emphasis added).

80. THOMPSON, *supra* note 74, at 16.

81. *See supra* part III.B.2 (emphasis added).

82. 33 U.S.C. § 1313(a) (1992).

83. *Id.*

84. 33 U.S.C. § 1313 (1988).

85. *Id.* § 1313(d)(1)(C).

86. *Id.*

ered in assessing the broad, nonpoint source effects of forestry operations.⁸⁷

Although water quality standards regulate poison runoff through area-wide plans, these standards, as originally enacted, were ineffective. While the CWA clearly requires compliance with water quality standards, regardless of the pollutant source—point or nonpoint—no specific controls were mandated for nonpoint sources as they are for point sources. Section 208 provides states with “adequate *authority* to control poison runoff, but it does not clearly *require* adequate program *implementation*.”⁸⁸ Thus, these section 208 plans were completed, but never implemented. This void in the federal code is compounded by the EPA’s failure to use its authority to require proper implementation.⁸⁹

Another deterrent to state implementation of nonpoint source controls is inadequate funding. Funding for section 208 activities was spotty beginning in 1973 and was completely discontinued in 1981.⁹⁰ As a result, any funding for poison runoff control programs has come from the states, and generally in low levels, if at all.⁹¹

Unsatisfied with the existing legal framework for controlling poison runoff, Congress adopted amendments to the CWA in the form of the Water Quality Act of 1987 to strengthen the control provisions of the CWA.⁹² Under section 319 of the CWA, states are directed to identify waters that, “without additional action to control nonpoint sources of pollution, cannot reasonably be expected to attain or maintain appreciable water quality standards or the goals and requirements of this Act.”⁹³ Once these waters are identified, the state must develop an assessment plan that identifies the categories and subcategories of nonpoint sources that significantly contribute to the pollution in those waters.⁹⁴ For each source of poison runoff identified, section 319 requires the state to develop a detailed management plan to address the pollution problem.⁹⁵

87. *Oregon Nat'l Resources Council v. U.S. Forest Serv.*, 834 F.2d 842, 851-52 (9th Cir. 1987); *Northwest Indian Cemetery Protective Assn. v. Block*, 795 F.2d 688, 697 (9th Cir. 1986).

88. THOMPSON, *supra* note 74, at 21.

89. *Id.* The EPA stated that its “official position was that the agency had no direct role in controlling poison runoff.” *Id.*

90. *Id.*

91. *Id.*

92. See 33 U.S.C. § 1329 (1988).

93. *Id.* § 1329(a)(1)(A).

94. *Id.* § 1329(a)(1)(B).

95. *Id.* § 1329(b). These four year management programs must include: (1) identification of “best management practices and measures” to control the nonpoint source pollution identified in the report; (2) identification of programs that will achieve implementation of those

The state is to develop and implement this program, to the maximum extent practicable, with input from local public and private agencies and organizations with expertise in control of poison runoff.⁹⁶

The EPA plays a critical role in the implementation of section 319. Under this section, the EPA is required to review and approve each state's nonpoint source assessment and management plan.⁹⁷ If a state fails to submit an adequate assessment, the EPA will prepare the assessment for the state.⁹⁸ By contrast, the Act is silent if a management plan is inadequate, except that states with inadequate plans are not eligible for CWA section 319 funding.⁹⁹ The EPA is not authorized by the Act to create a management plan for these states. In other words, states are not absolutely bound to create or implement management plans.

Since the passage of the Water Quality Act in 1987, there has been little or no effort on the EPA's part to obtain funding from Congress for its implementation.¹⁰⁰ This lack of effort has sent a strong negative message to state and local governments.¹⁰¹ Furthermore, the EPA has offered little guidance to the states in water quality standard setting or in the development of water quality-based controls.¹⁰² In short, the EPA has continued its lack of forceful leadership in the development and implementation of state nonpoint source management programs.¹⁰³

It is clear there is a lack of concentrated federal guidance.¹⁰⁴ The federal nonpoint source management role is only the "first level of what must be a multi-tiered effort to control the pervasive problem of poison runoff."¹⁰⁵ Thus, the responsibility for this significant and widespread pollution problem has fallen primarily on state and local governments.¹⁰⁶

measures; (3) certification by the state attorney general that state laws contain adequate authority to implement the program; (4) identification of all funding sources for poison runoff control that will be available for each fiscal year; and (5) a schedule for expeditious implementation of the program. Fogarty, *supra* note 42, at 33-34.

96. 33 U.S.C. § 1329(b)(3) (1988).

97. *Id.* § 1329(d).

98. *Id.* § 1329(d)(3).

99. *Id.* § 1329(h). In addition, where state plans are inadequate, local public agencies or organizations may submit, with state approval, their own plans to the EPA and may receive technical assistance and grant funds from the EPA. *Id.* § 1329(e).

100. THOMPSON, *supra* note 74, at 24.

101. *Id.*

102. *Id.* at 24-25.

103. *Id.* at 25.

104. NATKINS & SINDERBRAND, *supra* note 1, at 39.

105. THOMPSON, *supra* note 74, at 25.

106. See generally NATKINS & SINDERBRAND, *supra* note 1, at 38-41.

B. Components of an Effective Nonpoint Source Pollution Program

This section will provide a general framework for what a state nonpoint source pollution program ideally should contain. Methods to control agricultural runoff and urban runoff will be discussed. Additionally, funding necessary for the implementation of these controls will be analyzed.

1. Agricultural Runoff

Traditionally, agricultural programs to control nonpoint source pollution have relied heavily on voluntary government cost-sharing programs.¹⁰⁷ These programs provide government funds, education, and technical assistance. Many of these programs have been primarily concerned with soil erosion rather than water pollution prevention, and only recently has water quality become a focus of some of them.¹⁰⁸ Since voluntary cost-sharing programs have been the norm in the agriculture industry, little consideration has been given at the federal, state, and local level to the use of mandatory approaches.¹⁰⁹ Logically, participation in voluntary programs for soil conservation is higher than participation in water quality programs because soil erosion programs have on-farm as well as off-farm benefits. Thus, they offer a "self-interest" incentive for farmers to participate.¹¹⁰

In contrast, water quality programs may have only marginal on-farm benefits or may have no benefits whatsoever.¹¹¹ Since these programs provide minimal economic benefits for a farmer, that farmer has no incentive to voluntarily participate. Unfortunately, these same economic motives also lead to further overuse and degradation of land and water resources by farmers primarily concerned with their short-term economic status. The disadvantages of voluntary programs are even more apparent given the cyclical nature of the agricultural economy.¹¹² While agriculture's economy is cyclical, the need to protect water quality is continuous:

[S]oil conservation and pollution reduction programs should be deliberately designed to remain in place regardless of short-term

107. THOMPSON, *supra* note 74, at 40.

108. *Id.* at 40.

109. *Id.* at 40-41. Many efforts to control nonpoint source pollution under CWA § 208 were comprised primarily of voluntary programs. The failure of § 208 to adequately improve water quality has been attributed in part to the voluntary nature of most state plans. *Id.* at 41.

110. THOMPSON, *supra* note 74, at 46.

111. *Id.*

112. *Id.* at 51.

fluctuations in the agricultural economy. Since poison runoff controls that are adopted and maintained voluntarily are likely to be abandoned under adverse economic conditions, state officials need to develop more permanent approaches to ensure that [controls] necessary for water quality protection are implemented.¹¹³

A variety of options to voluntary cost-sharing exist for controlling poison runoff. The most practical option, design standards, are imposed to prohibit or alter activities that are considered a threat to water quality.¹¹⁴ For example, design standards may be in the form of local ordinances prohibiting the use of pesticides near surface waters. They may also be included in ordinances that restrict the destruction of riparian vegetation (vegetation within a certain distance from a surface water source) or the application of manure and fertilizer in amounts that would threaten water resources.¹¹⁵

Design taxes are also an option for reducing pollution from agricultural nonpoint sources. Design taxes consist of taxing arrangements whereby general polluting practices are taxed at different rates depending on the relative environmental harm caused by each practice.¹¹⁶ In addition to raising revenues for fighting the pollution problem, making the polluter pay has a significant deterrent effect.

Zoning also provides a valuable source of surface water protection from poison runoff. Zoning may be effective in prohibiting certain farming practices within a given distance from surface waters or on marshy or hilly land.¹¹⁷ Closely related to zoning are farmland preservation programs and conservation easements. These programs promote the conservation of prime farmland and discourage farming on steep, erosive, or otherwise marginal agricultural lands.¹¹⁸

Poison runoff controls must also address the use of chemicals in agriculture.¹¹⁹ Programs should include provisions to control the amount, timing, and manner of chemical use and require forested riparian "buffer

113. *Id.* Agricultural economic trends *should* be considered when considering funding for mandatory programs in the form of funding and tax credits. *Id.* For example, in an agricultural slowdown, funding to comply with mandatory programs may be necessary to prevent the bankruptcy of the agriculture system.

114. THOMPSON, *supra* note 74, at 59.

115. *Id.*

116. *Id.*

117. *See generally id.* at 61-64. Olmsted County, Minnesota has implemented such a regulatory program and has been successful in reducing soil erosion. *Id.* at 61.

118. *Id.*

119. Chemicals represent a major water quality threat. Agricultural fertilizers and pesticides can contaminate surface water by attaching to soil particles or dissolving into surface runoff. *See id.* at 61-64.

zones."¹²⁰ Strips of forested land between crops and surface waters as narrow as fifty feet can "remove the majority of nitrogen and phosphorus from surface and subsurface runoff."¹²¹

Programs to reduce pollution from livestock agriculture should also be implemented. Livestock "can contaminate surface and groundwater with nitrate, ammonia, and fecal bacteria and also can increase drastically streambank erosion if the animals are allowed access to riparian areas."¹²² These programs should control livestock densities and locations, preserve riparian areas, and limit land application of collected animal wastes.¹²³

2. Urban Runoff

Successful programs to control urban poison runoff must be based on the link between land use controls and water quality. In forging this link, there are several general control areas to consider including (1) land use controls; (2) stormwater control programs; and (3) erosion and sediment control programs. In imposing these urban controls, it is important to consider the timing of their implementation—before or after development. Controls implemented before are often more efficient and less expensive.¹²⁴ However, in areas where development has already occurred, retroactive urban controls are necessary.¹²⁵

Urban land use controls are generally implemented at the local level. They prevent pollution by establishing land use patterns consistent with water quality protection, open space preservation, and other environmental objectives, while providing for rational and orderly economic development.¹²⁶ This is achieved through control of lot sizes, lot

120. *Id.* at 67-68. Possible controls on agricultural chemicals include: taxes on the sale and manufacture of chemicals; encouragement of pesticide substitution; requirements for chemical users to report where, when, and in what amounts chemicals are being used; registration of pesticides at the state level; and authorization for states to prohibit use of registered pesticides where there are serious water contamination problems. *Id.* at 70.

121. Thompson, *supra* note 74, at 68.

122. *Id.* at 79. Currently, livestock sources of water pollution are not directly regulated under the CWA because point source controls do not apply to herds of less than 1000 head. *Id.* Herds of smaller numbers, while big polluters, are unregulated.

123. *Id.* at 79.

124. *Id.* at 126.

125. Examples of pre-development controls include: natural drainage features and buffer zones; vegetative cover; and control of amount, density, nature, location, and timing of development. Examples of post-development controls include: controls on volume and rate of discharges into stormwater systems; erosion and sediment reductions in developed areas; and easement purchases. THOMPSON, *supra* note 74, at 127.

126. *Id.*

placement, building codes, development rates, control of activities near riparian areas, control of vegetation left on a site, land and easement purchases, and erosion control practices.¹²⁷

Discrete sources of urban stormwater runoff are regulated under the CWA as point sources.¹²⁸ However, some stormwater contaminates groundwater or enters surface waters without ever being channeled into a point source. It is therefore important to control the quality of stormwater before it enters groundwater or surface waters. The most effective means to control the quality is by employing the local land use controls described above. Application of land use controls to retain urban runoff on-site, preferably through infiltration into the soil, is effective.¹²⁹ Additionally, methods that retain runoff include ponds and marshes designed to serve as drainage areas.¹³⁰ Additionally, effective land use methods for controlling erosion and sediment runoff include those requiring the use of proper drainage patterns in construction site design and requiring retention or treatment of contaminated runoff.¹³¹

3. Funding

States and municipalities cannot rely extensively on federal financial aid for program implementation given the extent of the federal deficit and Congress's historical reluctance to fund comprehensive nonpoint source pollution control programs.¹³² Therefore, states and local governments need to find other ways to fund nonpoint source pollution programs.

One effective way to fund these programs is to require polluters to be responsible for the direct costs of pollution abatement. This gives individual polluters incentives to remove themselves from the "polluter category" to avoid having to pay. In this sense, funding is both a "*tool* for reducing poison runoff and a *resource* to support other controls."¹³³ Other taxes may similarly be effective in reducing poison runoff and funding other controls. These include taxes on fertilizer use, farm prac-

127. See generally *id.* at 129-34.

128. See 33 U.S.C. § 1342 (1988).

129. THOMPSON, *supra* note 74, at 151.

130. *Id.*

131. *Id.* at 151-53.

132. *Id.* at 282. Congress authorized \$400 million over four fiscal years to fund state nonpoint source management programs. See 33 U.S.C. § 1329(j) (1993). However, Congress has not yet actually appropriated any funds for this program. THOMPSON, *supra* note 74, at 282.

133. THOMPSON, *supra* note 74, at 283.

tices that result in poison runoff, and land development or land transfer for the purpose of development.¹³⁴

Other methods of funding include penalties and fines for not complying with programs, as well as money from general taxpayer funds. Property taxes have become an important source of funds for controlling poison runoff.¹³⁵ Another method is to fund programs through user fees and licenses—entrance fees at state parks and fishing licenses, for example.

C. Wisconsin Inland Lake Nonpoint Pollution Policy Outlined

The water quality of inland lakes in Wisconsin has suffered due to nonpoint pollution. It is the most widespread cause of water pollution in the state.¹³⁶ This section will outline Wisconsin's means of controlling poison runoff and suggest alternative and additional measures to those presently in place.

In Wisconsin, the DNR is given overall responsibility for the state's nonpoint source program.¹³⁷ However, the Wisconsin Department of Agriculture, Trade and Consumer Protection (DATCP) is also involved with the program in recognition of agriculture's contribution to this problem.¹³⁸

The DNR rules provide for identification of area-wide water quality management areas and plans. These plans are for "managing, protecting, and enhancing ground and surface water quality which considers the interrelationship of water quality and land and water resources on an area-wide basis (hydrologic, political, or other)."¹³⁹ Those areas with water that is significantly impaired by nonpoint source pollution are popularly called "priority watersheds."¹⁴⁰

134. *Id.* at 284.

135. *Id.* at 290. Over 90% of Wisconsin's 15,000 lakes have their recreational uses impaired by poison runoff. *Id.*

136. Wisconsin Legislative Council Information Memorandum 92-9, *New Law Relating to Nonpoint Source Pollution (1991 Wisconsin Act 309)*, at 5 (June 2, 1992, revised June 11, 1992).

137. WIS. STAT. § 144.25 (1991-92).

138. *Id.* § 144.25(4), (5).

139. WIS. ADMIN. CODE § NR 121.03(1) (Oct. 1985). Each of these detailed plans include specific recommendations for urban areas including "construction site erosion control, improved street sweeping and vegetative debris collection and disposal, roadside and streambank erosion control, landfill site runoff control, stormwater runoff control, and the installation of spent-oil disposal stations." SOUTHEASTERN REGIONAL PLANNING COMM'N, THIRTY-FIRST ANNUAL REPORT 112 (1992). The plans also include recommendations for rural areas, including specific "improved cropping practices, better livestock waste management, streambank erosion control, and stormwater runoff control." *Id.*

140. This priority watershed program also encompasses priority lakes.

Priority watershed programs are to be created for each priority watershed, and management agencies are to be designated by the DNR. These management agencies are normally cities, towns, counties, and state agencies that assist in implementation of pollution abatement projects in designated priority areas. These management agencies receive technical and financial assistance from the DNR.¹⁴¹

Management agency responsibilities include project planning, implementation, and administrative duties.¹⁴² These administrative duties include contacting all operators or landowners identified as significant sources of poison runoff in the watershed program and attempting to secure their cooperation in implementing "best management practices" (BMPs).¹⁴³ Since participation in the nonpoint program is voluntary, securing cooperation from those land users who contribute most significantly is an important management agency function.¹⁴⁴

After the DNR selects the priority watershed, the DNR develops BMPs. These BMPs are:

practices, techniques and measures identified in area-wide water quality management plans, which are determined to be the most effective means of preventing or reducing pollutants generated from nonpoint sources to a level compatible with water quality objectives . . . and which do not have an adverse impact on fish and wildlife habitat.¹⁴⁵

The management agencies are attempting to encourage land owners to implement these BMP's.

The DNR may issue two types of grants to implement watershed projects: (1) cost-sharing grants that provide funding for implementation of best management practices to abate poison runoff; and (2) local assistance grants that fund administrative costs incurred by designated management agencies for project planning and implementation.¹⁴⁶

141. These priority areas are selected on the following bases:

1. Water quality impairment or threat to the use of the lake.
2. Practicability of achieving a significant pollution reduction.
3. Public use of the lake.
4. Capability of the DNR to carry out the project considering other commitments to ongoing projects.
5. Unique or endangered environmental resources.

WIS. ADMIN. CODE § NR 120.07(2) (May 1989).

142. Wisconsin Legislative Council, *supra* note 134, at 6.

143. *Id.* For a discussion of best management practice, see *infra* note 140.

144. *Id.*

145. WIS. STAT. § 144.25(2)(a) (1991-92).

146. Wisconsin Legislative Council, *supra* note 134, at 6. Nonpoint source pollution abatement grants are funded from a combination of state and federal appropriations. State

In 1988, the DNR identified 131 priority watersheds in the state with water quality significantly impaired by nonpoint source pollution. To date, only 10 of these 131 priority watershed projects have been completed and only 41 others have been initiated.¹⁴⁷ In 1990, the first two priority lakes projects were selected.¹⁴⁸ There is hope, however, that the final 80 priority watershed projects will soon be initiated. The state legislature has required planning on priority watersheds to be completed by December 31, 2000.¹⁴⁹

The DATCP also plays an important role in nonpoint source pollution abatement in rural areas by administering the Soil and Water Resource Management Program. Its functions are integrated with those of the DNR. The DATCP is authorized to award grants to aid in program implementation to regulate water and soil conservation activities.¹⁵⁰ Funding, however, is generally only provided to landowners for specific projects not covered by DNR nonpoint source grants.¹⁵¹

Wisconsin also has a construction site erosion control plan developed by the DNR. The DNR is required by law to establish minimum standards for activities related to construction site erosion control. It is also required to encourage counties and local governments to comply with the minimum standards for any construction site erosion control ordinance they enact.¹⁵² These minimum standards are contained in a model construction site erosion control ordinance. This ordinance requires a developer to get a permit before undertaking any significant land-developing or land-disturbing activities.¹⁵³ Municipalities, although encouraged to do so, are not required to adopt the model ordinance.¹⁵⁴

appropriations have constituted the bulk of funding for this program and provide for the cost-sharing grants and any remaining administrative costs of the program. In fiscal year 1991-92 and 1992-93, \$6,475,300 of the general purpose revenue was appropriated each year to fund the grant program. *Id.*

147. *Id.* at 5. The planning and implementation process takes nine to ten years to complete. *Id.*

148. *Id.*

149. Wisconsin Legislative Council, *supra* note 134, at 1.

150. The DATCP is involved in programs for erosion control, shoreland management to reduce streambank erosion, agricultural drainage ditches, pesticide use, and animal waste management. *Id.* at 12, 14, 16.

151. In fiscal year 1991-92, \$2,654,500 and in fiscal year 1992-1993, \$2,704,500 was appropriated from the general purpose revenue to fund the Soil and Water Resource Management Program. *Id.*

152. *Id.* at 9-10.

153. *Id.*

154. *Id.*

However, if a municipality does not adopt the ordinance, the DNR may withhold grant money.¹⁵⁵

Wisconsin has a number of programs dealing with controlling the effects of nonpoint source pollution on its inland lakes. These programs are fairly comprehensive in creating the means to identify poison runoff problems. However, their effectiveness in providing meaningful reductions in poison runoff is suspect, due largely to their voluntary nature.

Wisconsin's nonpoint source program is compromised because of its dependence on the voluntary cooperation of localities and landowners. If priority watershed districts are to be effective in increasing water quality in Wisconsin inland lakes, the use of BMPs by land users must be mandatory. Furthermore, although funds are available to implement nonpoint pollution control programs, a more equitable financial burden must be placed on the federal government for there to be adequate funds available to implement poison runoff control programs in an effective and timely manner.

Effective and direct control of nonpoint sources is crucial to maintaining acceptable levels of water quality in inland lakes. Wisconsin has several other water quality control programs that deal directly with maintaining inland lake water quality.

1. Public Inland Lake Protection and Rehabilitation

In 1974, Wisconsin established a program whereby local communities, with state financial and technical assistance, may implement projects to protect and enhance the public inland lakes.¹⁵⁶

Under this program, lake protection and rehabilitation districts are established by a community or county. The districts are responsible for initiating and implementing projects to improve water quality in their district. The law also provides for DNR oversight and financial assistance.¹⁵⁷ However, financial assistance, and therefore active projects, has been rather limited.¹⁵⁸ Although this program is a good idea, its success in protecting and rehabilitating our inland lakes has been marginal at best.

155. WIS. ADMIN. CODE § NR 120.16 (June 1986).

156. WIS. STAT. ch. 33 (1991-92).

157. *Id.* § 33.23-.24.

158. NATKINS & SINDERBRAND, *supra* note 1, at 55.

2. Shoreland Regulations

The DNR is required to promulgate minimum land use restrictions for shorelands,¹⁵⁹ which counties, villages, and cities must adopt as shoreland zoning ordinances.¹⁶⁰ The purpose of these zoning regulations is to "further the maintenance of safe and healthful conditions; prevent and control water pollution; protect spawning grounds, fish and aquatic life; control building sites, placement of structure and land uses and reserve shore cover and natural beauty."¹⁶¹ All shorelands must be zoned by the appropriate city or village. If the shorelands fall within an unincorporated area, the county must zone them.¹⁶²

At a minimum, zoning ordinances must include (1) minimum lot sizes to afford protection against danger to health and safety and protect against pollution of the adjacent water body;¹⁶³ (2) building setbacks that require buildings to be built a minimum distance from the water source's ordinary high water mark;¹⁶⁴ (3) tree trimming and shrub regulations to protect natural beauty, control erosion and reduce the flow of effluents, sediments and nutrients from the shoreland area;¹⁶⁵ (4) severe limitations on filling, grading, lagooning, dredging, ditching, and excavating;¹⁶⁶ and (5) provisions for nonconforming uses—the continuation of the lawful use of a building or property in existence prior to the zoning restrictions.¹⁶⁷

3. Structures and Deposits

It is unlawful in Wisconsin to deposit any material or place any structure in navigable waters without a permit.¹⁶⁸ This includes fill material

159. "Shoreland" is defined as all areas within 1000 feet from a lake or pond. WIS. STAT. § 59.971(1) (1991-92). The term "navigable waters" includes all natural inland lakes within this state. *Id.* § 144.26(2)(d).

160. *Id.* §§ 144.26, 59.971, 61.351, 62.231. The State's power to regulate land uses was upheld by the Wisconsin Supreme Court in *Just v. Marinette County*, 56 Wis. 2d 7, 201 N.W.2d 761 (1972).

161. WIS. ADMIN. CODE § NR 115.01(2) (Oct. 1985).

162. *See* WIS. STAT. § 59.97 (1991-92).

163. WIS. ADMIN. CODE § NR 115.05(3)(a) (Oct. 1985). Lots with public sewers must have a minimum average width of 65 feet and a minimum area of 10,000 feet. Those without a public sewer must be 100 feet wide on average and have a minimum area of 20,000 feet. *Id.*

164. *Id.* § NR 115.05(3)(b). For example, all new buildings must be constructed 75 feet from the ordinary high water mark, except for piers, boat hoists, and boathouses. *Id.*

165. *Id.* § NR 115.05(3)(c).

166. *Id.* § NR 115.05(3)(d).

167. *Id.* § NR 115.05(3)(e).

168. WIS. STAT. § 30.12(1) (1991-92).

and structures including piers, wharves, boathouses, and rafts.¹⁶⁹ In order to get a permit, the applicant must be a riparian owner (owner of shoreland property), the activity cannot materially obstruct navigation, and it cannot be detrimental to the public interest.¹⁷⁰

4. Navigable Waters Regulation

The DNR has the responsibility to administer programs for the protection and use of navigable waters, including the following subject areas: (1) actions to abate public nuisances or infringement of public rights in navigable waters; (2) development and operation of harbors; and (3) regulation of boating.¹⁷¹

Indirect controls are beneficial in maintaining water quality control. However, there are often conflicts between regulations, which are effective water quality controls, and the Public Trust Doctrine, which provides that navigable waters "shall be common highways and forever free"¹⁷² There is a key conflict between policies of the DNR providing for preservation of aquatic resources¹⁷³ and public access to lakes and rivers for recreational use.¹⁷⁴ Recreational areas on our lakes are becoming more and more scarce. Evidence of this lies in the lakefront property real estate market. The DNR is under pressure to maintain a level of public accessibility to our lakes at a time when the availability of shoreland access is shrinking. The DNR also has conflicts with riparian owners who strongly object to any attempts by the DNR to regulate their use of their property through zoning restriction. There are also conflicts from the agriculture industry and farmers who are responsible for a great deal of nonpoint source pollution.

V. CONCLUSION

Preservation of Wisconsin's inland lakes is crucial. The lakes provide a valuable source of recreation—boating, swimming, and fishing. They are a source of aesthetic beauty and a natural habitat for fish and waterfowl. Their water quality affects the water quality of our rivers, wetlands, and drinking water.

169. *Id.* Excluded from this rule are piers or wharves that do not interfere with public or private rights and are within a pierhead line. *Id.*

170. *Id.* § 30.12(2).

171. See WIS. STAT. chs. 30 & 31 (1991-92).

172. WIS. CONST. art. IX, § 1.

173. See WIS. ADMIN. CODE § NR 1.01 (March 1994).

174. WIS. ADMIN. CODE § NR 1.90 (March 1994).

Controls aimed at point source discharge into Wisconsin lakes are important. However, point source pollution is a relatively small source of lake pollution problems. In addition, attention must be focused on remedies for nonpoint source pollution, which is the most prevalent cause of lake water quality degradation. Creation of effective nonpoint remedies is not an easy task. The number of point runoff sources seems infinite, and a comprehensive program that addresses every source does not exist. The result has been a complex, incremental patchwork of federal, state, and local laws that attempt to include every pollution source.

Many attempts at water quality control are best implemented at the state and local level—zoning restrictions, for example. However, active federal involvement, especially technical and financial, is essential. This requires a partnership between the federal and state governments for the most efficient allocation of their combined resources to attain the high level of water quality necessary to preserve our inland lakes.

THOMAS S. HANRAHAN